

**CLAIMS**

We claim:

1. A system for implementing a business application on an Internet based computer system using high-level object oriented technology and frameworks, comprising:

a. a server computer hosting a business application management system platform, accessible via client computers to a plurality of users;

b. the business application management system platform further comprising a WDK Web interface server for receiving a user selected command and for processing a web document that is a custom presentation of information;

c. a BDK business server electronically coupled to the WDK Web interface server, for storing business objects to and retrieving business objects from a database containing persistent business object data related to the business application;

d. an information distributor server electronically coupled to the WDK Web interface server for generating metadata for a business object, for storing the metadata in a metadata database, for querying the metadata database when asked to do so by a requestor, and for providing the results of a match to a query to the requestor;

e. a first database of information related to the business application, the first database electronically coupled to the BDK business server, the first database also containing common business objects; and

f. a second database of metadata related to business objects, the second database electronically coupled to the BDK business server;

whereby the business application is available via the internet to assist a user in performing a specific business operation which requires location of and use of business objects and display of results of the specific business operation to the user in a dynamically selectable format.

2. The system of claim 1 wherein the business application management system platform further comprises an interconnect server, electronically coupled to the BDK business server, the interconnect server comprising a backbone framework for use in importing data and for exporting data to and from a third party business application located on another server.

3. The system of claim 1 wherein the WDK Web interface server uses an MVW engine for controlling outputs to a user by the use of model, view and widget files, which are extensible markup language (XML) files, and wherein the web document that is a custom presentation of information is a custom presentation of model, view and widget information.

4. The system of claim 3 wherein the view file in the WDK Web interface server comprises a plurality of style sheets for use in determining a format of a display to be made to a user, the format being a function of whether the user is an HTML client, a PDF client or a WML client, and the MVW engine using the extensible style sheet transformation (XSLT) language for transforming an XML stylesheet into the format required by the user.

5. The system of claim 1 wherein the BDK business server provides an Enterprise Java Bean (EJB) based applications programming interface (API).

6. The system of claim 5 wherein the first database containing persistent business object data contains data comprising common business objects and application specific business objects.

7. The system of claim 5 wherein the BDK business server is further electronically coupled to a core services layer comprising security services, internationalization services and reporting services.

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8. The system of claim 5 wherein the BDK business server comprises a framework which provides a wrapper around standard EJB entity beans and EJB session beans, the wrapper containing additional object data than that which is required by the EJB component architecture.

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9. The system of claim 1 wherein the information distributor server generates metadata comprising data representing attributes of an object, an icon label related to an object if the object has a related icon, relationships of the object to other objects if the object has any such relationships, and data which a user may customize for a particular object.

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10. The system of claim 2 wherein the interconnect server backbone framework comprises mechanisms for using XML to import objects into the interconnect server, export objects from the interconnect server to other related business applications, and to monitor changes in specific objects whereby such changes can be reported to interested parties.

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11. An Internet-based method for implementing a business application using object oriented technology and frameworks comprising the following acts:

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a. providing a server computer hosting a business application management system platform, accessible via client computers to a plurality of users, the business application management platform including a user interface (UI) comprising controls whereby a user selects a command and a display whereby results are displayed;

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b. providing a WDK Web interface server as a part of the business application management system platform, for receiving the user selected command and for processing a web document that is a custom presentation of information;

5 c. providing a BDK business server electronically coupled to the WDK Web interface server, for storing business objects to and retrieving business objects from a database containing persistent business object data related to the business application;

10 d. providing an information distributor server electronically coupled to the WDK Web interface server for generating metadata for a business object, for storing the metadata in a metadata database, for querying the metadata database when asked to do so by a requestor, and for providing the results of a match to a query to the requestor;

15 e. providing a first database of information related to the business application, the first database electronically coupled to the BDK business server, the first database also containing common business objects; and

20 f. providing a second database of metadata related to business objects, the second database electronically coupled to the information distributor server;

25 whereby the business application is available via the internet to assist a user in performing a specific business operation which requires location of and use of business objects and display of results of the specific business operation to the user in a dynamically selectable format.

30 12. The method of claim 11 comprising the additional act of providing an interconnect server, electronically coupled to the BDK business server, the interconnect server comprising a backbone framework for use in importing data

and for exporting data to and from a third party business application located on a separate server.

13. The method of claim 11 comprising the additional act of using an  
5 MVW engine for controlling outputs to a user by the use of model, view and  
widget files, which are extensible markup language (XML) files, and wherein the  
web document that is a custom presentation of information is a custom  
presentation of model, view and widget information.

10 14. The method of claim 13 comprising the additional act of using, in the  
view file in the WDK Web interface server, a plurality of style sheets for use in  
determining a format of a display to be made to a user, the format being a function  
of whether the user is an HTML client, a PDF client or a WML client, and the  
MVW engine using the extensible style sheet transformation (XSLT) language for  
transforming an XML stylesheet into the format required by the user.  
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15. The method of claim 11 wherein the BDK business server provides an  
Enterprise Java Bean (EJB) based API.

20 16. The method of claim 15 comprising the additional act of using the  
first database containing persistent business object data to also contain data  
comprising common business objects and application specific business objects.

25 17. The method of claim 15 comprising the additional act of using the  
BDK business server in a manner where it is further electronically coupled to a  
core services layer comprising security services, internationalization services and  
reporting services.

30 18. The method of claim 15 comprising the additional act of using the  
BDK business server to provide a framework which provides a wrapper around  
standard EJB entity beans and EJB session beans, the wrapper containing

additional object data than that which is required by the EJB component architecture.

19. The method of claim 11 comprising the additional act of using the  
5 information distributor server to generate metadata comprising data representing attributes of an object, an icon label related to an object if the object has a related icon, relationships of the object to other objects if the object has any such relationships, and data which a user may customize for a particular object.

10 20. The method of claim 12 comprising the additional act of using the interconnect server backbone framework to comprise mechanisms for using XML to import objects into the interconnect server, export objects from the interconnect server to other related business applications, and to monitor changes in specific objects whereby such changes can be reported to interested parties.

15 21. A computer-readable storage medium containing computer executable code for implementing a business application using object oriented technology and frameworks by instructing a computer to operate as follows:

20 a. load a business application management system platform, accessible via client computers to a plurality of users, the business application management platform including a user interface (UI) comprising controls whereby a user selects a command and a display whereby results are displayed;

25 b. execute a WDK Web interface server as a part of the business application management system platform, for receiving the user selected command and for processing a web document that is a custom presentation of information;

c. execute a BDK business server electronically coupled to the WDK Web interface server, for storing business objects to and retrieving business

objects from a database containing persistent business object data related to the business application;

5           d. execute an information distributor server electronically coupled to the WDK Web interface server for generating metadata for a business object, for storing the metadata in a metadata database, for querying the metadata database when asked to do so by a requestor, and for providing the results of a match to a query to the requestor;

10           e. access a first database of information related to the business application, the first database electronically coupled to the BDK business server, the first database also containing common business objects; and

15           f. access a second database of metadata related to business objects, the second database electronically coupled to the information distributor server;

20           whereby the business application is available via the internet to assist a user in performing a specific business operation which requires location of and use of business objects and display of results of the specific business operation to the user in a dynamically selectable format.

25           22. The computer-readable storage medium of claim 21 wherein the computer is further instructed to execute an interconnect server, electronically coupled to the BDK business server, the interconnect server comprising a backbone framework for use in importing data and for exporting data to and from a third party business application located on a separate server.

30           23. The computer-readable storage medium of claim 21 wherein the computer is further instructed to use an MVW engine for controlling outputs to a user by the use of model, view and widget files, which are extensible markup language (XML) files.

24. The computer-readable storage medium of claim 23 wherein the  
computer is further instructed to use, in the view file in the WDK Web interface  
server, a plurality of style sheets for use in determining a format of a display to be  
made to a user, the format being a function of whether the user is an HTML client,  
5 a PDF client or a WML client, and the MVW engine using the extensible style  
sheet transformation (XSLT) language for transforming an XML stylesheet into  
the format required by the user.

25. The computer-readable storage medium of claim 21 wherein the  
10 BDK business server provides an Enterprise Java Bean (EJB) based API.

26. The computer-readable storage medium of claim 25 wherein the  
computer is further instructed to use the first database containing persistent  
business object data to also contain data comprising common business objects and  
15 application specific business objects.

27. The computer-readable storage medium of claim 25 wherein the  
computer is further instructed to use the BDK business server in a manner where  
it is further electronically coupled to a core services layer comprising security  
20 services, internationalization services and reporting services.

28. The computer-readable storage medium of claim 25 wherein the  
computer is further instructed to use the BDK business server to provide a  
framework which provides a wrapper around standard EJB entity beans and EJB  
25 session beans, the wrapper containing additional object data than that which is  
required by the EJB component architecture.

29. The computer-readable storage medium of claim 21 wherein the  
computer is further instructed to execute the information distributor server to  
30 generate metadata comprising data representing an object ID, attributes of an  
object, an icon label related to an object if the object has a related icon,

relationships of the object to other objects if the object has any such relationships, and data which a user may customize for a particular object.

30. The computer-readable storage medium of claim 22 wherein the  
5 computer is further instructed to execute the interconnect server backbone framework wherein it uses XML to import objects into the interconnect server, export objects from the interconnect server to other related business applications, and to monitor changes in specific objects whereby such changes can be reported to interested parties.

10 31. An Internet-based method for implementing a business application using object oriented technology and frameworks comprising the following acts:

15 a. providing a client input device having a user interface (UI) wherein the UI includes controls whereby a user selects a command and a display whereby results are displayed;

20 b. transmitting the command to a server comprising a business application management system platform which includes a WDK Web interface server as a part of the business application management system platform, for receiving the user selected command and for processing a web document that is a custom presentation of information;

25 c. receiving at the client input device a display of results relating to the command, the results obtained by an information distributor server electronically coupled to the WDK Web interface server for generating metadata for a business object, for storing the metadata in a metadata database, for querying the metadata database when asked to do so by a client input device, and for providing the results of a match to a query to the client input device;

30 whereby the business application is available via the internet to assist a user in performing a specific business operation which requires location of and

use of business objects and display of results of the specific business operation to the user in a dynamically selectable format.

32. The Internet-based method of claim 31 wherein the client input device  
5 is a personal computer.

33. The Internet-based method of claim 31 wherein the client input device  
is a wireless personal data assistant device.

10 34. The Internet-based method of claim 31 wherein the client input device  
is a cellphone.

15 35. The Internet-based method of claim 31 comprising the additional act  
of receiving data from a related business application by means of an interconnect  
server, electronically coupled to the BDK business server, the interconnect server  
comprising a backbone framework for use in importing data and for exporting  
data to and from a third party business application located on a separate server.

20 36. The Internet-based method of claim 31 wherein the results returned to  
the client input device is received from a WDK Web interface server which uses  
an MVW engine for controlling outputs to a user by the use of model, view and  
widget files, which are extensible markup language (XML) files.

25 37. The Internet-based method of claim 36 wherein the WDK Web  
interface server, uses a plurality of style sheets in determining a format of a  
display to be made to a user, the format being a function of whether the user is an  
HTML client, a PDF client or a WML client, and the MVW engine using the  
extensible style sheet transformation (XSLT) language for transforming an XML  
stylesheet into the format required by the user.

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38. The Internet-based method of claim 31 wherein the BDK business server provides an Enterprise Java Bean (EJB) based API.

5           39. The Internet-based method of claim 38 comprising the additional act of receiving results obtained from a first database containing persistent business object data to also contain data comprising common business objects and application specific business objects.

10           40. The Internet-based method of claim 38 wherein the results obtained for display are partially obtained from the information distributor server which generates metadata comprising data representing an object ID, attributes of an object, an icon label related to an object if the object has a related icon, relationships of the object to other objects if the object has any such relationships, and data which a user may customize for a particular object.

15           41. The Internet-based method of claim 12 wherein the results obtained for display are partially obtained from the interconnect server backbone framework which uses mechanisms for using XML to import objects into the interconnect server, export objects from the interconnect server to other related business applications, and to monitor changes in specific objects whereby such changes can be reported to interested parties.